CL2X16-D1M1V **CC-Link/LT Remote I/O Module**

Thank you very much for purchasing this product.

Please read this manual thoroughly before starting to use the product and handle the product properly

User's Manual

MODEL CL2X16-D1M1V-U MODELCODE 13JP07

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SAFETY PRECAUTIONS

(Read these precautions before using.)
Please read this manual carefully and pay special attention to safety in order to handle this product properly. Also pay careful attention to safety and handle the module

These precautions apply only to Mitsubishi equipment. Refer to the user's manual of the CPU module to use for a description of the programmble controller system safety

In this manual, the safety precautions are classified into two levels: "_____WARNING" and "ACAUTION"

∆ WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.			
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.			

Under some circumstances, failure to observe the precautions given under "__CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and parters engined.

[DESIGN PRECAUTIONS]

<u>∧</u> WARNING

- Configure an interlock circuit in a sequence program so that the system operates
- on the safety side using the communication status information in the event the data link falls into a communication problem.

 Otherwise, erroneous output and malfunction may result in accidents, Input could be switched on or off when a problem occurs in the remote I/O modules. So build an external monitoring circuit that will monitor any input signals that could cause a serious accident.

[DESIGN PRECAUTIONS]

⚠ CAUTION

- Do not have control cables and communication cables bundled with or placed near by the main circuit and/or power cables. Wire those cables at least 100mm(3.94 inch) away from the main circuit and/or
- power cables.

 It may cause malfunction due to noise interference.

[INSTALLATION PRECAUTIONS]

⚠ CAUTION

- Use the module in an environment that meets the general specifications contained in this manual. Using this module in an environment outside the range of the general specifications could result in electric shock, fire, erroneous operation, and damage to or deterioration of the product.
- Do not directly touch the module's conductive parts. Doing so could cause malfunction or trouble in the module.
- Securely fix the module in place using the DIN rail. If the module is not securely fixed, it may fall off or cause malfunction.

[WIRING PRECAUTIONS]

<u>_</u> WARNING

Completely turn off the externally supplied power used in the system when installing or placing wiring. Not completely turning off all power could result in electric shock or damage to the product.

[WIRING PRECAUTIONS] **⚠** CAUTION

- Where the module correctly upon verifying the product's rated voltage and the connector pin arrangement. Connecting to a power supply different from rating miss-wiring may cause fire and/or product failure.
 Make sure foreign objects do not get inside the module, such as dirt and wire chips. It may cause fire, product failure or malfunction.

ISTARTING AND MAINTENANCE PRECAUTIONS1

MARNING

Switch off all phases of the externally supplied power used in the system when cleaning the module or retightening the terminal or module mounting screws. Not doing so could result in electric shock.

[STARTING AND MAINTENANCE PRECAUTIONS]

↑ CAUTION

- Do not disassemble or modify the module. Doing so may cause failure,
- Do not alsassemole or modify the module. Doing so may cause failure, malfunction, injury, or firef.

 The module case is made of resin; do not drop it or subject it to strong shock. A module damage may result.

 Completely turn off the externally supplied power used in the system before mounting or removing the module. Not doing so could result in damage to the product.
- Before touching the module, always touch grounded metal, etc. to discharge static electricity from the human body, etc. Not doing so can cause the module to fail or malfunction.

[DISPOSAL PRECAUTIONS]

⚠ CAUTION

When disposing of this product, treat it as industrial waste.

PRÉCAUTIONS DE SÉCURITÉ

(Lire ces précautions avant usage.) Prière de lire attentivement ce manuel. Prêter une attention particulière à tout ce qui a trait à la sécurité pour utiliser le produit correctement.

Ces précautions ne concernent que l'équipement Mitsubishi. Dans le manuel de l'utilisateur du module CPU correspondant, voir l'exposé des précautions de sécurité concernant le système de l'automate programmable.

Dans ce manuel, les précautions de sécurité sont classées en deux niveaux, à savoir : "_____AVERTISSEMENT" et " _____ATTENTION"

<u> </u>	200
<u>AVERTISSEMENT</u>	Attire l'attention sur le fait qu'une négligence peut créer une situation de danger avec risque de mort ou de blessures graves.
⚠ ATTENTION	Attire l'attention sur le fait qu'une négligence peut créer une situation de danger avec risque de blessures légères ou de gravité moyennes ou risque de dégâts matériels.

circonstances, le non-respect d'une précaution de sécurité introduite sous le titre " ATTENTION" peut avoir des conséquences graves. Les précautions de ces deux niveaux doivent être observées dans leur intégralité car elles ont trait à la sécurité des personnes et aussi du système Veiller à ce que les utilisateurs finaux lisent ce manuel qui doit être conservé soigneusement à portée de main pour s'y référer autant que de besoin.

[PRÉCAUTIONS DE CONCEPTION]

<u>AVERTISSEMENT</u>

- Prévoir dans le programme séquentiel un circuit de verrouillage sur la base des informations d'état de la communication, de façon à maintenir la sécurité de fonctionnement du système dans l'éventualité d'un problème de communication
- fonctionnement du système dans l'éventualité d'un problème de communication affectant la liaison de données. Faute de quoi, une sortie erronée ou un dysfonctionnement pourrait être à l'origine d'accidents.

 L'entrée peut être activée ou désactivée à la survenance d'un problème dans les modules E/S distants. On constituera donc un circuit de surveillance externe couvrant tous les signaux d'entrée qui pourraient être à l'origine d'un accident crave

[PRÉCAUTIONS DE CONCEPTION]

<u> ATTENTION</u>

Ne pas grouper ni placer à proximité les câbles de commande ou câbles de communication avec les câbles des circuits principaux et/ou d'alimentation. Câbler en plaçant ces câbles à une distance d'au moins 100mm (3,94 pouces) des câbles des circuits principaux ou de l'alimentation. Cela pourrait être à l'origine d'un bruit parasite entraînant des

[PRÉCAUTIONS D'INSTALLATION]

<u>ATTENTION</u>

- Utiliser le module dans un environnement conforme aux spécifications générales présentées dans ce manuel. L'utilisation de ce module dans un environnement autre que celul prévu dans les spécifications générales peut être à l'origine d'un choc électrique, d'un départ de feu ou d'un dysfonctionnement, ou peut endommager ou détériorer le produit. Éviter tout contact direct avec les parties produit. conductrices du module. Cela pourrait être à l'origine de dysfonctionneme, autres problèmes avec le module. 6 Fixer femmement le module en place sur le rail DIN. Si le module n'est pas fermement fixé, il risque de tomber ou il peut y avoir des dysfonctionneme

[PRÉCAUTIONS DE CÂBLAGE]

AVERTISSEMENT

 Couper complètement l'alimentation externe utilisé par le système avant de mettre avant le câblage ou le raccordement de câbles. Ne pas couper complètement toutes les alimentations expose au risque de chocs électriques et d'endommagement du produit.

[PRÉCAUTIONS DE CÂBLAGE]

<u> ATTENTION</u>

- Câbler le module correctement après vérification de la tension nominale du produit et de l'affectation des broches de connecteur. Le raccordement d'une alimentation de tension nominale différente ou une erreur de câblage peuvent être à l'origine
- d'un départ de feu et/ou d'une panne du produit. Veiller à éviter toute pénétration d'impuretés, copeaux de câblage ou autre corps étranger dans le module. Cela pourrait étre à l'origine d'un départ de feu, ou du panne ou d'un dysfonctionnement du produit.

IPRÉCAUTIONS DE DÉMARRAGE ET DE MAINTENANCEI

<u>AVERTISSEMENT</u>

Avant le nettoyage du module ou le resserrage des vis de borne ou des vis de fixation du module, couper les alimentations externes utilisées par le système toutes les phases. Faute de quoi, il y a risque de choc électrique.

[PRÉCAUTIONS DE DÉMARRAGE ET DE MAINTENANCE]

ATTENTION

- Ne pas démonter ni modifier le module. Cela pourrait être à l'origine de pannes, de dysfonctionnements, de blessures ou d'un départ de feu.
- Oysonicionimientes, se diessaisa ou auf repetit de reu.

 Ne pas faire tomber ou soumettre le module à des chocs car son boîtier en plastique est fragile. Il pourrait en résulter un endommagement du module.

 Couper complétement l'alimentation externe utilisé par le système avant de mettre en place ou de retirer le module. Faute de quoi, il y a risque d'endommagement du poduit.
- produit.

 Avant de toucher au module, se débarrasser de la charge électrostatique qu'accumule le corps humain en touchant un objet métallique raccordé à la terre. Faute de quoi, il y a risque de panne ou de dysfonctionnement du module.

[PRÉCAUTIONS DE MISE AU REBUT]

<u> ATTENTION</u>

CONDITIONS OF USE FOR THE PRODUCT

• Lors de sa mise au rebut, ce produit doit être traité comme un déchet industriel.

- (1) Mitsubishi programmable controller ("the PRODUCT") shall be used in
- conditions;
 i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
 ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.
 The PRODUCT has been designed and manufactured for the purpose of being used in general industries.
- The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

 MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY, FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

 ("Prohibited Application")

 Prohibited Application")

 Prohibited Application'

 Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.

 Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.

Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property. Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

Overview

Overview

This user's manual explains specifications and names of individual parts of the CL2X16-D1M1V type CC-Link/LT remote I/O module (hereinafter abbreviated as

2. Specifications

2.1 General Specifications								
The General specifications for the remote I/O module are shown in the following table.								
Item	Specificati	ons						
Operating ambient temperature Températur e ambiante de fonctionne ment	0 to 55°C 0 à 55 °C							
Storage ambient temperature	-25 to 75°C	;						
Operating ambient humidity	5 to 95%RI	H, non-conde	ensing					
Storage ambient humidity								
Vibration resistance	Compliant with JIS B		Frequency	Constant acceleration	Half amplitude	Sweep		

	vibration resistance	with JIS B		Frequency	Constant acceleration	Half amplitude	Sweep count			
		3502 and IEC 61131-2	Under	5 to 8.4Hz	-	3.5mm	10 times			
			intermittent vibration	8.4 to 150Hz	9.8m/s ²	-	each in X, Y, Z directions			
			Under	5 to 8.4Hz	-	1.75mm	-			
			continuous vibration	8.4 to 150Hz	4.9m/s ²	-				
	Shock resistance	Compliant with JIS B 3502 and IEC 61131-2 (147 m/s ² , 3 times each in 3 directions X, Y, Z)								
	Operating atmosphere	No corrosive gases								
	Operating altitude	0 to 2000m								
	Installation location	Inside a control panel *3								
	Overvoltage category *1	II or less								
	Pollution	2 or less	2 or less							

- agree 1
 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises.

 Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300V is 3500V.
- *2 This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used.
 Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.

 3 It can also be used in an environment other than on the control panel if the
- conditions such as usage ambient temperature and humidity are satisfied

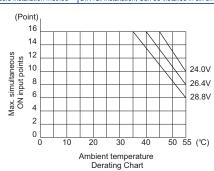
2.2 Performance specifications

The performance specifications for the remote I/O module are shown in the following

Туре	CL2X16-D1M1V
Item	
Number of outputs	16 points
Isolation method	Photocoupler isolation
Rated load voltage	24V DC
Rated input current	Approx. 4mA
Input derating	Refer to the derating chart.
ON voltage/ON current	19V or higher/3mA or higher
OFF voltage/OFF current	11V or lower/1.7mA or lower
Input resistance	5.6kΩ

Item							
Response time	Response time setting		e time	0.5ms (High speed response type) 1.5ms (Standard type)			
		F→	TYP.	0.05ms	-		
	ON	l	MAX.	0.1ms	1.5ms		
	ON		TYP.	0.2ms	-		
	OF	F	MAX.	0.5ms	1.5ms		
Common w	/irin	g meth	iod	16 points/1 common (2 poi (MIL connector 1-wire type			
Input methor	od			Positive common			
Number of	stat	ions o	ccupied	In 4-point mode: Occupies 4 stations, In 8-point mode Occupies 2 stations, In 16-point mode: Occupies 1 station			
Module	Voltage		ge	24V DC (-15 to +20%) (ripple ratio : within 5%)			
power supp	oly	Curre	nt imption	45mA or lower (When 24V DC and all point is on)			
Noise durability			DC type noise voltage 500Vp-p, noise width 1µs, noise carrier frequency 25 to 60Hz (noise simulator condition) First transient/noise burst IEC 61000-4-4: 1kV				
Withstand v	volta	ige		500V AC for 1 minute between primary (external DC terminal) and secondary (internal circuit)			
Insulation r	esis	tance		10MΩ or more between primary (external DC terminal) and secondary (internal circuit) when measured with a 500V DC insulation resistance teste			
Protection (clas	s		IP2X			
Weight				0.05kg			
I/O part cor	I/O part connection method			20 pin MIL connector			
Module ins	talla	tion m	ethod	DIN rail installation, Can be installed in six directions			
(P	oin 1	1					

Type CL2X16-D1M1V



3. Part Names

This section explains the names of the components for the remote I/O module.

	Connector for I/O interface	Pin No.	Signal name	Pin No.	Signal name
₩S #S CL2X16-D1M1V		CON1-20	X0	CON1-19	X8
12345678 ST.No. 0000000000	20 - 19	CON1-18	X1	CON1-17	X9
UNKERW (BOODGOOD)	18 17	CON1-16	X2	CON1-15	XA
4)	14 • • 13	CON1-14	Х3	CON1-13	XB
[] 6	12 0 0 11	CON1-12	X4	CON1-11	XC
L RSIN O L EIRI	8 7	CON1-10	X5	CON1-9	XD
	6 5	CON1-8	X6	CON1-7	XE
1){	2 1	CON1-6	X7	CON1-5	XF
1)		CON1-4	COM+	CON1-3	COM+
		CON1-2	COM+	CON1-1	COM+
1){					

English	French
Connector for I/O interface	Connecteur pour interface E/S
Pin No.	Broche N°
Signal name	Nom de signal



Connector for CC-Link/LT interface

Pin No

	Connector for CC- Link/LT interface	Pin No.	Signal name
	LINK/PW	1	+24V
	4321	2	DA
		3	DB
		4	24G

Broche N°

Connecteur pour interface CC-Link/LT

			The state of the s			
No.	Item	Description				
1)	Operating status	LED name	Confirmation details			
	indicator LEDs	PW	On: Power supply on. Off: The power supply is turned off or the voltage drop is too large.			
		L RUN	On: Normal communication. Off: Communication cutoff (time expiration error).			
		LERR.	On: Indicates that a communication data error has occurred or the setting switch is outside the allowable range. Flicker at regular intervals: Indicates that the setting switch has been changed while current is being conducted. (The module continues to operate even while the LED is flickering. The changed settings will be reflected when the power has been restored.) Flicker at irregular intervals: Indicates that the terminal resistor is left unconnected or that the module or connection cable are affected by noise. Off: Normal communication.			
		0 to F	Displays the ON/OFF status of the input (turned on in the ON status and turned off in the OFF status).			
2)	Response time setting switch *1	I/O modu	esponse time (OFF→ON/ON→OFF time) of the remote le. et as default (factory-set).			

	switch (SW8)	Noise may set. Be sure to ON: 0.5m	is set as default (factory-set). is emay be taken in as input, if high speed response type is ure to set response time in consideration of the environm 0.5ms (High speed response type) 11.5ms (Standard type) "10" "10" "10" "10" is the tent of the station.						
3)	Station number setting switches*1 (SW1 to 7)	number. Select "1" number. All switche Always se A setting outside th (Example)	elect "1","2","4" or "8" to set the one's place of the station					n lue	
		Station	Ten's p	lace		One's place			
		number	40 (SW1)	20 (SW2)	10 (SW3)	8 (SW4)	4 (SW5)	2 (SW6)	1 (SW7

			(3441)	(3442)	(3443)	(3444)	(3443)	(3440)	(344
		32	OFF	ON	ON	OFF	OFF	ON	OFF
_									
4)	Connector for CC- Link/LT interface	Connector supply.	r for CC	-Link/LT	commu	nication	line an	d modul	e pow
5)	Connector for I/O interface	MIL connector for connecting input sig supply of the input part.						xternal p	ower
6)	Hook for DIN rail	Hook for installing the module on a DIN rail.							
*1	*1 Set up using a slotted screwdriver with a tip width of 0.9 mm or less.								

4. Handling Precautions

1. When using a DIN rail, attach the DIN rail after taking the following items into Applicable DIN rail types (conform to JIS C 2812)

TH35-7.5Fe TH35-7.5AI

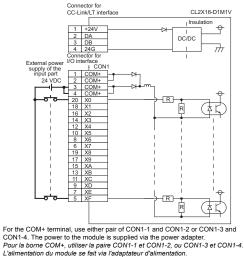
Interval between the DIN rail's installation screws

Tighten the screws using a pitch of 200mm (7.87in.) or less when attaching a DIN rail.

To attach the remote I/O module to the DIN rail, press the centerline area of the DIN rail hook beneath the module until a click is heard.

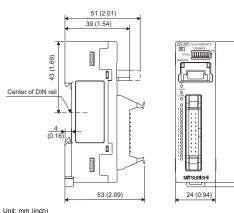
3. When installing the remote I/O module into a panel, etc., provide 15mm (0.59 in.) or more of space between the top and bottom of the module and other structures of parts so that good ventilation and ease of operation when exchanging modules can

5. Wiring



English	French
External power supply of the input part 24 VDC	Alimentation externe de la partie entrée 24Vcc
Connector for CC-Link/LT interface	Connecteur pour interface CC-Link/LT
Connector for I/O interface	Connecteur pour interface E/S
Insulation	Isolation

6. External Dimensions



WARRANTY

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

roducts, and to other duties.	
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MITSUBISHI ELECTRIC CORPORATION

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